

## HOLDING DEVICE

### Cross-Reference To Related Application

[001] This application is based on and claims priority from provisional patent Application  
5 Number 60/429,689 filed on November 27, 2002.

### Technical Field

[002] The present invention relates to holding devices and more particularly to a holding  
10 device capable of holding a combination of a bag and a rigid container.

### Background Art

[003] The use of containers for the storage of items is well known. Such containers are  
used to store a variety of articles, from food to general household items including everything  
15 from craft supplies to children's toys. Generally, such containers can be characterized by  
shape, size, and the presence or absence of a lid. Containers that do not include a lid require  
a separate sealing member, such as a plastic wrap or aluminum foil. Often, the plastic wrap  
or aluminum foil is loose or jostled during movement of the container, and hence, the  
container is usually not properly sealed or closed to prevent contents therein from spilling.  
20 Containers that include lids overcome this problem.

[004] In addition to the foregoing, many different types and sizes of containers exist. When  
such containers are placed together in a confined space, such as a cupboard, cabinet, drawer,  
shelf, refrigerator, or the like, a disorganized condition can develop, preventing a user from  
easily locating a particular container. Further, as a user is attempting to locate a particular  
25 container, the container may be jostled, thereby causing one or more containers to fall off a  
supporting surface to the floor, resulting in breakage of the container and/or the articles  
stored therein and/or spilling of contents. Also, the containers are usually placed on top of  
one another, leading to an inefficient use of space. Still further, when containers are stacked  
on top of each other in an unconfined location, the containers tend to slide out of the stacked  
30 configuration and into a disorganized state.

[005] Storage systems have been utilized in many settings and to organize many different items and solve some of these problems. These systems have generally been designed to organize and store items in settings from the kitchen to the hobby work bench. Generally, the systems are adapted to hold one type of storage containers, such as thermoplastic bowls, or  
5 boxes, thermoplastic storage bags, or the like. Therefore, the user of the system is constrained by the size and type of container that the system was designed to utilize.

However, differing settings require the use of many different containers of various sizes and shapes. When faced with such a problem the user of known systems is forced to use a one type of container fits all solution and place all of the items to be stored into the same type of  
10 container. This leads to wasted space when the item to be stored is placed in a container too large, or mixing of different items into a single container to increase the efficiency of space being used.

[006] Furthermore, the use of a single type or size of container or bag leads to difficulty in locating and retrieving the needed item in an efficient manner. For example, by utilizing  
15 known rack systems that only hold containers or only hold bags the user is forced to look through uniform shaped and sized containers without any visual difference between them.

[007] DeBruyn U.S. Patent No. 4,653,818 discloses a dry food storage container system wherein containers are supported by hanger plates that form a rack and are adapted to slide in and out of a cabinet. An upwardly projecting lug formed on the hanger plate restricts free  
20 sliding movement of the container. The containers may be laterally removed from or laterally inserted into the hanger plates when the container is lifted slightly over the lugs.

[008] Baglio, U.S. Patent No. 4,832,290 discloses a separate hanger for flexible plastic bags. This device discloses the use of a rack system to support flexible plastic bags and hang the bags below the rack system.

25 [009] Schwartz, U.S. Patent No. 4,998,630 discloses organized storage for miscellaneous parts. The storage system disclosed utilizes a suspended rack system to organize only flexible plastic bags.

[0010] Lemke, U.S. Patent No. 5,467,949, discloses a clamping hanger for food bags. The device disclosed utilizes a pinching mechanism to hold only flexible plastic bags individually  
30 or as in rack of identical holding devices.

[0011] Similarly, Gravell et. al., U.S. Patent No. 5,394,993, also discloses a rack for suspension and sealing of bags. The device discloses a pinching system substantially identical to the Lemke device above but in a circular rack system that holds only flexible plastic bags.

5 [0012] Marino Jr. U. S. Patent No. 5,964,359 discloses a modular storage system for multiple containers including a base having a top wall, a side wall, and a bottom wall wherein the bottom wall has a front opening cutout. A jar with cover may be inserted into the opening wherein the cover rests on the bottom wall and suspends the jar with contents therefrom.

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#### Summary of the Invention

[0013] According to one aspect of the present invention, a holding device includes a support surface and a first holding portion integral with the support surface and adapted to suspend a bag. The holding device further includes a second holding portion integral with the support surface and adapted to suspend a rigid container.

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[0014] According to another aspect of the present invention, a holding device includes a support surface and a first holding portion for supporting a bag, wherein the first holding portion includes a first pair of elongate holding members substantially parallel to one another and integral with the support surface. The first pair of holding members defines a first channel having a length and being open at one end thereof. A slot is disposed between the first pair of holding members and extends the length of the first channel wherein the slot is narrower than the first channel. The holding device also includes a second holding portion for supporting a rigid container, wherein the second holding portion includes a second pair of elongate holding members substantially parallel to one another and integral with the support surface. The second pair of holding members defines a second channel having a length and is open at one end thereof. An opening is defined between the second pair of holding members extending the length of the second channel and the opening is narrower than the second channel.

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[0015] According to a further embodiment of the present invention, a combination includes a holding device, a bag, and a rigid container. The holding device includes a support surface and a first pair of elongate holding members each having a proximal portion adjacent the

support surface and a distal portion wherein the first holding members define a first channel. The first channel has a slot formed by the distal portions of the first holding members wherein the slot has a first width. The holding device further includes a second pair of elongate holding members each having a proximal portion adjacent the support surface and a distal portion wherein the second holding members define a second channel. The second channel has an opening formed by the distal portions of second holding members wherein the opening has a second width. The bag has bag walls and a closure mechanism wherein the bag walls have a combined third width less than the first width and wherein the closure mechanism has fourth width greater than the first width. The closure mechanism is disposed in the first channel of the holding device and the bag walls extend through the slot of the holding device. The rigid container has a sidewall, an open end, and a rim extending outwardly from the sidewall wherein the sidewall defines a fifth width less than the second width and wherein the rim defines a sixth width greater than the second width. The rim is disposed in the second channel of the holding device and the sidewall extends through the opening of the holding device.

**[0016]** In accordance with yet another embodiment of the present invention, a holding device includes a support surface and first means integral with the support surface for retaining a bag. The holding device further includes a second means integral with the support surface for retaining a rigid container.

**[0017]** In accordance with a further aspect of the present invention, a holding device includes a support surface along with first and second walls integral with the support surface and forming a slot therebetween wherein the slot has a first portion for receiving a bag and a second portion for preventing removal of the bag from the slot. The holding device further includes third and fourth walls integral with the support surface and forming an opening therebetween wherein the opening has a first portion for receiving a container and a second portion for preventing removal of the container from the opening.

**[0018]** According to a still further aspect of the present invention, a method of suspending a bag and a storage container includes the steps of providing a holder having a first section capable of receiving the bag and a second section capable of receiving the storage container and mounting the holder on a surface. The bag is placed in the first section such that the bag

is suspended thereby and the storage container is placed in the second section such that the storage container is suspended thereby.

[0019] Other aspects and advantages of the present invention will become apparent upon consideration of the following detailed description.

5                                    Brief Description of the Drawings

[0020] FIG. 1 is an isometric view of a holding device according to a first embodiment of the present invention;

[0021] FIG. 2 is an elevational front end view of the holding device of FIG. 1;

10   [0022] FIG. 2a is a sectional view of the holding device of FIG. 1 taken generally along the lines 2a-2a of FIG. 2;

[0023] FIG. 2b is a sectional view of the holding device of FIG. 1 taken generally along the lines 2b-2b of FIG. 2;

[0024] FIG. 3 is a view similar to FIG. 2 and illustrating the holding device of FIGS. 1-2b in conjunction with a bag and container;

15   [0025] FIG. 4 is an isometric view of a holding device according to a second embodiment of the present invention;

[0026] FIG. 5 is an elevational front end view of the holding device of FIG. 4;

[0027] FIG. 5a is a sectional view of the holding device of FIG. 4 taken generally along the lines 5a-5a of FIG. 4;

20   [0028] FIG. 5b is a sectional view of the holding device of FIG. 4 taken generally along the lines 5b-5b of FIG. 4;

[0029] FIG. 6 is a view similar to FIG. 3 showing the holding device of FIGS 4-5b in conjunction with a bag and container;

25   [0030] FIG. 6a is a sectional view of the holding device and container taken generally along the lines 6a-6a of FIG. 6;

[0031] FIG 6b is a sectional view of the holding device and bag taken generally along the lines 6b-6b of FIG. 6;

[0032] FIG. 7 is a view similar to FIG. 6 according to a third embodiment of the present invention in conjunction with a container and bag;

[0033] FIG. 8 is a view similar to FIG. 4 according to a fourth embodiment of the present invention;

[0034] FIG. 8a is a sectional view of the holding device taken generally along the lines 5a-5a of FIG. 5;

5 [0035] FIG. 8b is a sectional view of the holding device of taken generally along the lines 8b-8b of FIG. 8;

[0036] FIG. 9 is a view similar to FIG. 5 according to a fifth embodiment of the present invention;

10 [0037] FIG. 9a is a sectional view of the holding device taken generally along the lines 9a-9a of FIG. 9;

[0038] FIG. 9b is a sectional view of the holding device taken generally along the lines 9b-9b of FIG. 9;

[0039] FIG. 10 is a view similar to FIG. 5 according to a sixth embodiment of the present invention;

15 [0040] FIG. 11 is a view similar to FIG. 5 according to a seventh embodiment of the present invention;

[0041] FIG. 12 is a view similar to FIG. 5 according to an eighth embodiment of the present invention;

20 [0042] FIG. 13 is a view similar to FIG. 5 according to a ninth embodiment of the present invention;

[0043] FIG. 14 is a view similar to FIG. 5 according to a tenth embodiment of the present invention;

[0044] FIG. 15 is a view similar to FIG. 5 according to an eleventh embodiment of the present invention;

25 [0045] FIG. 16 is a view similar to FIG. 4 according to a twelfth embodiment of the present invention;

[0046] FIG. 17 is a view similar to FIG. 4 according to a thirteenth embodiment of the present invention; and

30 [0047] FIG. 18 is an isometric view of a holding device according to a fourteenth embodiment of the present invention molded into a refrigerator shelf.

### Description of the Preferred Embodiments

[0048] In the following description, reference numerals that differ only in the hundreds digit denote like structures or elements in the various embodiments.

5 [0049] Referring now to FIGS. 1-2b a holding device 30 includes a support surface 32 with a first side 34. Extending away from the first side 34 of the support surface 32 are two sets of elongate holding members 36, 38. As seen in FIG. 2, a member of the set 36 can be integral with a member of the other set 38. Alternatively, as described hereinafter, the members of the two sets 36, 38 can be completely separate from one another.

10 [0050] Each of the holding members 36a, 36b of the set 36 is L-shaped in cross-section and includes an inwardly directed flange 37, 39 defining the boundaries of a first channel 40 and a slot 42 that is narrower than the first channel 40. Front ends 44a, 44b of the first pair of holding members 36 have angled neck portions 46a, 46b that serve as a tapered lead-in portion for the slot 42 to assist in insertion of a bag 70 into the slot 42.

15 [0051] Each of the holding members 38a, 38b of the set 38 is also L-shaped in cross-section but larger than the first set 36. Each of the members 38a, 38b includes an inwardly directed flange 47, 49 that together define the boundaries of a second channel 50 and an opening 52 that is narrower than the second channel 50.

[0052] As depicted in FIGS. 1, 2 and 2b, a second side 54 of the support surface 32 is placed  
20 against a vertical, horizontal, or non-vertical and non-horizontal surface (not shown); preferably, although not necessarily, with the first side 34 of the support surface 32 facing down and is secured by screws 56 that pass through screw holes 58 and into the surface. This, however, is simply one method of securing the holding device 30 to a surface. For example, FIGS. 4, 4a and 4b illustrate a holding device 130 according to the present  
25 invention that could be secured by double-sided tape 160. In addition, any other suitable apparatus may be used to secure the holding device to a surface. For example, an adhesive, a hook and loop fastener (e.g., a Velcro fastener), a magnet, or the like could be used. Alternatively, as noted in greater detail hereinafter, the device can be molded as part of a cabinet or refrigerator shelf or undersurface.

[0053] Referring now to FIG. 3, the holding device 30 is shown in use with a bag 70 and a rigid container 90. In this embodiment, the bag 70 is of the pinch and seal type. The bag has bag walls 72 that are sealed together on three sides 74 and further has a reclosable side 76 with a closure mechanism 78. The closure mechanism has sealing strips 80 that lock together and present a thickness 82 greater than the combined thickness of the bag walls 72. In use, the closure mechanism 78 of the bag 70 is inserted into the first channel 40 and the bag walls 72 hang free through the slot 42. When released by the user the closure mechanism 78 of the bag 70 comes in contact with the inwardly directed flanges 37,39 of the holding members 36 that define the slot 42 and thus is held in place.

[0054] The rigid container 90 shown in FIG. 3 is of the thermoplastic disposable type, however, any container having a rigid member capable of supporting the container and extending from the sidewall thereof could be used. In this embodiment, the rigid container 90 is formed by four rigid sidewalls 92 with a sealed bottom end 94. A peripheral rigid lip 96 extends outwardly from the sidewall and can receive a lid 98 that allows the top 99 of the container to be sealed. In use, the rigid container 90 is inserted into the second channel 50 so that the rigid lip 96 is disposed between the support surface 32 and the inwardly directed flanges 47, 49 of the holding members 38 and the sidewalls 92 hang free in the opening 52. When released by the user the rigid lip 96 comes in contact with the flanges 47, 49 and thus, the container 90 is held in place.

[0055] In the embodiment of the invention shown in FIG. 1, a back end 102 of the set of holding members 36 is open and, therefore, the first channel 40 and slot 42 can accommodate a bag 70 that is longer than the length of the holding device 30. In contrast, a back end 104 of the set of holding members 38 is closed by a back wall 66. Accordingly, the holding device 30 can accommodate a rigid container 90 of limited length. These features, however, could be modified so that either or both back ends 102, 104 are open or closed.

[0056] A second embodiment of the present invention is shown FIGS. 4-5b. In this embodiment the holding device 130 is identical to the holding device 30 shown in FIGS. 1-2b but for two differences. First, at the front end 168 of each of the holding members 138 there is a retaining lip 169 extending toward the support surface 132 and partially blocking the second channel 150. Second, there is an interference member 161 incorporated into the first



channel 140. As shown in FIG. 4b, the interference member 161 extends into the first channel 140, thereby narrowing the first channel 140, but does not extend into the slot 142.

[0057] Referring now to FIGS. 6-6b the second embodiment is useful to assist in the closing of a bag 170 that utilizes a slider 171. The bag 170 has bag walls 172 that are sealed together on three sides 174 and have a reclosable side 176. The closure mechanism 178 comprises a closure strip 173 on each side wall 172 at the reclosable side 176 and a slider 171. The slider 171 is movably mounted on the closure strips 173 and serves to open the bag 170 when moved in one direction and close the bag 170 when moved in the opposite direction.

Preferably, the closure mechanism 178 of the bag 170 with the slider 171 in the open position is inserted (slider 171 first) into the first channel 140 through the front end of the first pair of holding members 144. The bag 170 is inserted so that the slider 171 enters the first channel 140 and the bag walls 172 hang through the slot 142. As shown in FIG. 14b the slider 171 then comes in contact with the interference member 161 and is held in place while the user pulls the bag 170 through the first channel 140. The slider 171 is thereby moved across the closure strips 173 and the slider 171 is moved into the closed position.

[0058] Alternatively, the closure mechanism 178 of the bag 170 with the slider 171 in the closed position may be inserted (slider 171 first) into the first channel 140 through the front end of the first pair of holding members 144. The bag 170 may then be further inserted so that the slider 171 enters the first channel 140 and the bag walls 172 hang through the slot 142. As shown in FIG. 14b the slider 171 then comes in contact with the interference member 161 and is held in place while the user pulls the bag 170 through the first channel 140. The slider 171 is thereby moved across the closure strips 173 and the slider 171 is moved toward the fully opened position.

[0059] If desired, the embodiment of FIGS 4-5b and 6-6b can be used with the pinch and seal bag shown in FIG. 13.

[0060] The rigid container 190 used with the embodiment shown in FIG. 6-6b may be identical to the containers described above in connection with the embodiment of FIG. 3. In use, the rigid container 190 is inserted into the front end 168 of the second pair of holding members 138 so that the rigid lip 196 is disposed between the inwardly directed flanges 147, 148 of the holding members 138 and the support surface 132 and the sidewalls 192 hang

free in the opening 152. When the container 190 is released by the user the rigid lip 196 contacts the flanges 147, 149 of the holding members 138 and thus is held in place. In addition, as shown in FIG. 14a, the retaining lip 169 interferes with the rigid lip 196, and thus the container 190 cannot slide out of the holding device 130 without the user lifting the rigid lip 196 above the retaining lip 169.

[0061] Referring now to FIG. 7, a third embodiment of the invention is shown in use. The holding device 230 is identical to the embodiment in FIG. 6 except for having a retaining lip 269 on only one of the holding members 238.

[0062] FIGS. 8-8b illustrate a fourth embodiment of the present invention. The holding device 330 is substantially identical to the first embodiment shown in FIGS. 1-2b, but has retaining lips 369 on both holding members 338a, 338b. (Equivalently, the third embodiment is identical to the second embodiment shown in FIGS. 4-5b except that the interference member 161 is omitted.)

[0063] FIGS. 9-9b illustrate a fifth embodiment of the present invention. The holding device 430 is substantially identical to the embodiment shown in FIGS. 1-2b, but further includes an interference member 461 disposed within the holding members 436 wherein the member 461 is identical in structure and function to the interference member 161 described above.

[0064] Referring now to FIGS. 10-15, further embodiments of the present invention are shown. FIG. 10 shows a configuration having two sets of holding members 536-1, 536-2 each adapted to hold a bag 70 and identical to the set of holding members 36 shown in FIG. 2 and one set of holding members 538-1 adapted to hold a rigid container 90 and identical to the set of holding members 38 of FIG. 2. The set of holding members 538-1 is disposed between the sets of holding members 536-1 and 536-2.

[0065] FIG. 11 shows a configuration having one set of holding members 536-3 adapted to hold a bag 70 and identical to the set of holding members 36 shown in FIG. 2 and two sets of holding members 538-2, 538-3 adapted to hold a rigid container 90 and identical to the set of holding members 38 of FIG. 2. The sets of holding member 538-2, 538-3 are disposed on either side of the set of holding members 536-3.

[0066] FIG. 12 shows a configuration having two sets of holding members 536-4, 536-5 adapted to hold a bag 70 and identical to the set of holding members 36 shown in FIG. 2 and

two sets of holding members 538-4, 538-5 adapted to hold a rigid container 90 and identical to the set of holding members 38 of FIG. 2. The sets of holding members 536-4, 536-5 are disposed in side-by-side relationship and sets of holding members 538-4, 538-5 are disposed on either side of the sets of holding members 536-4, 536-5.

5 [0067] FIG. 13 illustrates an embodiment having three sets of holding members 536-6, 536-7, 536-8 adapted to hold a bag 70 and identical to the set of holding members 36 shown in FIG. 2. In addition, one set of holding members 538-6 adapted to hold a rigid container 90 and identical to the set of holding members 38 of FIG. 2 is disposed on one side of the sets 536-6, 536-7, 536-8.

10 [0068] FIG. 14 shows an embodiment having one set of holding members 536-9 adapted to hold a bag 70 and identical to the set of holding members 36 shown in FIG. 2 and three sets of holding members 538-7, 538-8, 538-9 adapted to hold a rigid container 90 identical to the set of holding members 38 of FIG. 2. The holding members 538-7, 538-8, 538-9 are disposed on one side of the set of holding members 536-9.

15 [0069] FIG. 15 shows a configuration having three sets of holding members 536-10, 536-11, 536-12 adapted to hold a bag 70 and identical to the set of holding members 36 shown in FIG. 2. Three sets of holding members 538-10, 538-11, 538-12 each adapted to hold a rigid container 90 and identical to the set of holding members 38 of FIG. 2 are disposed in alternating relationship with the three sets of holding members 536-10, 536-11, 536-12.

20 [0070] Referring now to FIG. 16, a twelfth embodiment of a holding device according to the present invention is shown. The holding device 630 is identical to the holding device depicted in FIG. 4 except that at an end 675 of the holding device 630 opposite the first pair of holding members 636 a clip 677 is attached or otherwise formed. The clip 677 includes a first clip member 677a resiliently pivoted to a second clip member 677b forming a side panel  
25 of the device 630. A spring (not shown) biases the first clip member 677a to the position shown in FIG. 16 such that a leg 680 of the member 677a is in clamping contact with a leg 682 of the second member 677b. The clip 677 enables a user to clamp a bag of any type to the device 630.

30 [0071] FIG. 17 illustrates a thirteenth embodiment of the present invention. The holding device includes similar features to any of the embodiments described above except that each

of the sets holding members 736 or 738 is spaced from each adjacent set of holding members 736 or 738. The advantage to such an embodiment is that a bag 70 filled with a bulky material will not interfere with a container 90 being placed into the holding device.

5 [0072] A fourteenth embodiment of the present invention is seen in FIG. 18. The holding device 630 is formed as part of a member 832, such as a refrigerator, a cabinet, a pantry shelf, etc... In this embodiment, one or more of the sets of holding member 536 and one or more of the sets of holding members 538 extend from the bottom of the member 832 but are otherwise identical in function to the embodiment shown in FIG. 17. This embodiment may be particularly useful where the ambient environment may adversely affect the secure  
10 attachment of the holding device to a surface.

#### Industrial Applicability.

[0073] Any of the varying configurations and combinations of members 36 and 38, and any permutations thereof, may be provided in any of the devices disclosed herein. Further, in  
15 any of the embodiments disclosed herein, any or all of the holding members 36, 136, 236, 336, 536, and 636 may or may not include the interference member 161 and any or all of the members 38, 138, 238, 338, 438, 538 and 638 may or may not include a retaining lip 169. The present invention allows a user to store varying combinations of storage bags and rigid containers in a cabinet, under a shelf or cabinet, in a pantry, in a refrigerator, etc..., without  
20 taking up shelf space. The bag(s) and container(s) are maintained in a neat and orderly condition, thereby keeping mess to a minimum and allowing the user to easily locate the contents thereof.

[0074] Numerous modifications to the present invention will be apparent to those skilled in the art in view of the foregoing description. Accordingly, this description is to be construed  
25 as illustrative only and is presented for the purpose of enabling those skilled in the art to make and use the invention and to teach the best mode of carrying out same. The exclusive rights to all modifications which come within the scope of the appended claims are reserved.